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DR. VAILLANT'S TOPOLOGY OF ADDICTION

George E. Vaillant MD wrote an overview article for ASAM (American Society of Addiction Medicine) titled, "Natural History of Addiction and Pathways to Recovery." "Addiction is a medical disorder with a complex etiology, multiple manifestations of illness, and a varied clinical course." He divided his study into two parts: 1. addiction without pre-morbid psychiatric co-morbidity, i.e., alcohol abuse; 2. addiction that results from efforts at self-medication of pre-morbid psychiatric co-morbidity, i.e., heroin and polydrug abuse. While alcoholism usually develops slowly[1], it generally occurs in those with little pre-morbid psychopathology. On the other hand, heroin addiction usually begins in youth with personality disorders and depression. In order to delineate the contrast between these two conditions, Dr. Vaillant poses three questions:

A. How does addiction begin? Three interactive factors are at play: host/agent/environment.
    1. Host:
        a. Genetic predisposition: 50% of alcoholism has been demonstrated to occur along familial lines, stronger concordance with the father than the mother.
        b. Dysfunctional multiproblem families: these families appear to breed delinquency of all kinds along with substance abuse, much less frequently than alcoholism.
        c. Co-morbid psychiatric disorders: three psychiatric conditions appear to contribute to the risk for alcoholism: anti-social personality[2], panic disorder, and attention deficit disorder. However, the common dual diagnoses include depression and Axis II personality disorders (especially antisocial and borderline). However, although depression and alcoholism run in families, multigenerational studies have demonstrated

[1] Vaillant GE (1995). Natural History of Alcoholism Revisited. Cambridge, MA: Harvard Univ. Press.
[2] Cloninger CR et al. Childhood personality predicts alcohol abuse. Alcohol: Clinical and Experimental Research 12 (4): 494-505.

that the family linkages for each disorder are genetically separate. In addition, clinical studies have shown that the use of antidepressants does not tend to alter the course of alcoholism, while abstinence from alcohol tends to alleviate the depression.

2. Agent: "addiction is more complicated than mere pharmacology."
    a. Availability: alcohol abuse is rare in countries with grain shortages, religious restriction or legal constraints.
    b. Cost: social policy affects price structure. Yet it has been found that manipulating social policy and secular legislation do not have a great track record in the U.S. for controlling substance abuse.
    c. Rapidity of reaching the brain: IV heroin is far more dependence inducing than oral methadone.
    d. Efficacy as a tranquilizer: heroin provides relief for pain, anger, insomnia, hunger and depression.
3. Environment:
    a. Time-bound activities such as occupation and family serve as protection against developing substance dependence. The opposite occurs when the potential addict is unhooked from time-bound rituals by unemployment, illness, stress, etc.
    b. Peer group: fashion is at work in drug choice as in music or clothing. Marriage provides stability and protection, while "prospective studies indicate that alcoholic spouses create unhappy marriages far more often than unhappy marriages create alcoholic spouses."
    c. Culture: Italian culture: children are taught social drinking and intoxication is proscribed. Alcohol is usually consumed with meals. American culture: drinking occurs in bars without food; intoxication is funny or "manly." Children are taught that drinking is "bad."
    d. Social instability: in youth gangs or the interface between Western culture and a developing country, one sees alcohol abuse going hand-in-hand.

Alcohol abuse involves the following risk factors: culture, genes, social networks, sociopathy.

Substance abuse involves the following: sociopathy, dysfunctional childhood, social alienation, rapidity of chemical action, psychiatric co-morbidity.

In any individual, however, the eleven factors in these two clusters will overlap.

B. How does addiction persist?

"Addiction is a disorder of remissions, relapses and often premature death." And as in many chronic diseases, it is often progressive; but usually by age 40, substance abuse may stabilize. Female alcoholics are prone to a more rapid downhill course than men. They are more likely to die from cirrhosis and violence and also have more medical complications. There is a paradox in alcohol abuse: "greater severity of dependence is associated with a greater likelihood of stable abstinence…unlike most medical disorders."

Good motivation, high socioeconomic status, marital and employment stability and lack of criminality all predict good short-term prognoses.

Approximately one-third of alcoholics die before their 60th birthday, usually from accident, suicide or heart disease. The course of progression from social drinking to alcohol abuse to alcohol dependence tends to occur gradually over a period of three to fifteen years. In women, dependence tends to occur more rapidly than in men.

Overtime, craving and withdrawal symptoms take on a life of their own, and are maintained by non-pharmacological reinforcers[3]. It is most important to keep in mind that relapse depends as much or more on environmental cues as on the pharmacology itself or conscious motivation.

Dr. Vaillant points out that detoxification is often life saving and an opportunity for education and intervention. However, it does not alter the natural history of addiction per se. Detoxification addresses the problem of physiological dependence but does not address the addictive thinking and reinforced addictive behaviors that underlie the multifactorial origins of addiction.

C. How does addiction cease?

Dr. Vaillant points out that most clinical studies of substance abuse have been far too brief to gain an understanding of the recovery process. Remissions from addiction of less than two years are frequently transient (relapse rates are still as high as 40% after two years of abstinence), while abstinence of five years tends to portend a permanent remission as relapse rates fall dramatically. "Stable abstinence (defined as not using the addictive substance for at least the past three years while living in the community) appears relatively independent of the severity of the (original) risk factors." "Stable abstinence depends on relapse prevention, not detoxification." Stable abstinence appears to require a carrot and stick approach.

1. Occurs in the community and the time frame is years, not months.
2. Often includes compulsory supervision, with voluntary participation.
3. Discover a substitute dependency.
4. New drug-free social network with a source of hope and self-esteem.

Conclusion:

While detoxification may not cure, it certainly reduces mortality and suffering. The natural history of chronic substance dependence must evoke our compassion as substance abuse and dependence produces enormous suffering. We must move away from a model of addiction as a voluntary use of a psychoactive drug to provide self-medication or self-indulgence. We must conceive of addiction as a career, a whole constellation of conditioned and unconscious behaviors. Addiction involves a loss of behavioral plasticity, requiring structure, new reinforcers, behavior modification, stability, purpose and compassion.

[3] Dole VP & Nyswander M (1965). A medical treatment for diacetylmorphine (heroin) addiction. JAMA 193: 646-650.